**[0044]** FIG. **2** is a schematic flow chart of a quick charging method in accordance with another embodiment of the present disclosure.

**[0045]** FIG. **3** is a schematic view showing that a power adapter implements a data reception and transmission in accordance with an embodiment of the present disclosure.

**[0046]** FIG. **4** is a schematic view of a sequence of that the power adapter implements a communication in accordance with an embodiment of the present disclosure.

**[0047]** FIG. **5** is a schematic view of a sequence of that the power adapter implements a communication in accordance with another embodiment of the present disclosure.

**[0048]** FIG. **6** is a diagrammatic view of a structure of a power adapter in accordance with an embodiment of the present disclosure.

**[0049]** FIG. **7** is diagrammatic view of a structure of a mobile terminal in accordance with an embodiment of the present disclosure.

## DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

**[0050]** The technical solution of embodiments of the present disclosure will be described clearly and completely in combination with the accompanying drawings of the embodiments of the present disclosure. Obviously, the described embodiments are a part of embodiments of the present disclosure, and not all of the embodiments. According to the embodiments of the present disclosure, other embodiments obtained by those skilled in the art without creative work all fall within the protection scope of the present disclosure.

**[0051]** FIG. **1** is a schematic flow chart of a quick charging method in accordance with an embodiment of the present disclosure. The method is applied to a power adapter. The power adapter is coupled to a mobile terminal via a universal serial bus (USB) interface. The USB interface can be a normal USB interface, and can also be a micro USB interface. A power line of the USB interface is used for the power adapter to charge the mobile terminal, and the power line of the USB interface can be a VBus line and/or grounding line. The power adapter supports a normal charging mode and a quick charging mode, and a charging current corresponding to the quick charging mode is greater than a charging current corresponding to the normal charging mode. For example, the charging current corresponding to the normal charging mode is generally less than 2.5 A, and the charging current corresponding to the quick charging mode can be greater than 3 A.

**[0052]** The method of FIG. **1** includes the following.

**[0053]** At block **110**, the power adapter transmits clock signal to the mobile terminal via a first data line of the USB interface in a process of that the power adapter is coupled to the mobile terminal, and the clock signal is used to indicate a communication sequence between the power adapter and the mobile terminal.

**[0054]** It should be understood that the power adapter actively transmits the clock signal to the mobile terminal, and keeps transmission of the clock signal during the whole process of that the power adapter is coupled to the mobile terminal.

**[0055]** At block **120**, the power adapter conducts a bidirectional communication with the mobile terminal via a second data line of the USB interface under control of the communication sequence, so as to determine to charge the mobile terminal in the quick charging mode.

**[0056]** At block **130**, the power adapter adjusts a charging current of the power adapter to the charging current corresponding to the quick charging mode to charge the mobile terminal.

**[0057]** In detail, the power adapter can record the charging current corresponding to the quick charging mode in advance. When it is determined that the quick charging mode is adopted to charge the mobile terminal, the charging current of the power adapter is directly adjusted to the charging current corresponding to the quick charging mode. Or, the power adapter can negotiate with the mobile terminal via the bidirectional communication to determine the charging current corresponding to the quick charging mode. After negotiation, the charging current is adjusted.

**[0058]** In embodiments of the present disclosure, the power adapter does not increase the charging current blindly to implement quick charging, but negotiates with the mobile terminal via the bidirectional communication with the mobile terminal to determine whether or not the quick charging mode can be adopted. Comparing with the present technology, the security of the quick charging process is improved.

**[0059]** Optionally, in an embodiment, the communication sequence includes instruction transmission time slots of the power adapter and instruction reception time slots of the power adapter, and the instruction transmission time slots and the instruction reception time slots are alternatively generated. Conducting, by the power adapter, a bidirectional communication with the mobile terminal via a second data line of the USB interface under control of the communication sequence to determine to charge the mobile terminal in the quick charging mode, includes: transmitting, by the power adapter, a first instruction to the mobile terminal via the second data line during the instruction transmission time slot of the power adapter, wherein the first instruction is used to query the mobile terminal for whether or not to activate the quick charging mode; receiving, by the power adapter, a reply instruction corresponding to the first instruction via the second data line during the instruction reception time slot of the power adapter, wherein the reply instruction corresponding to the first instruction is used for indicating that the mobile terminal agrees to activate the quick charging mode; and determining, by the power adapter, to charge the mobile terminal in the quick charging mode according to the reply instruction corresponding to the first instruction.

**[0060]** Optionally, in an embodiment, the instruction transmission time slot of the power adapter includes a number of clock periods, and each clock period is used for transmitting a 1-bit data.

**[0061]** Optionally, in an embodiment, the instruction transmission time slot of the power adapter includes eight clock periods, and the first instruction includes a 8-bit data.

**[0062]** Optionally, in an embodiment, the instruction reception time slot of the power adapter includes a number of clock periods, and each clock period is used for receiving 1-bit data.

**[0063]** Optionally, in an embodiment, the instruction reception time slot of the power adapter includes ten clock periods, and the reply instruction corresponding to the first instruction includes a 10-bit data.

**[0064]** Optionally, in an embodiment, the first instruction is an instruction of the quick charging communication